

How Can Institutional Researchers Use Employment Data?

Connecting Unemployment Insurance (UI) Wage and Baccalaureate Data

**Association for
Institutional
Research Annual
Forum**
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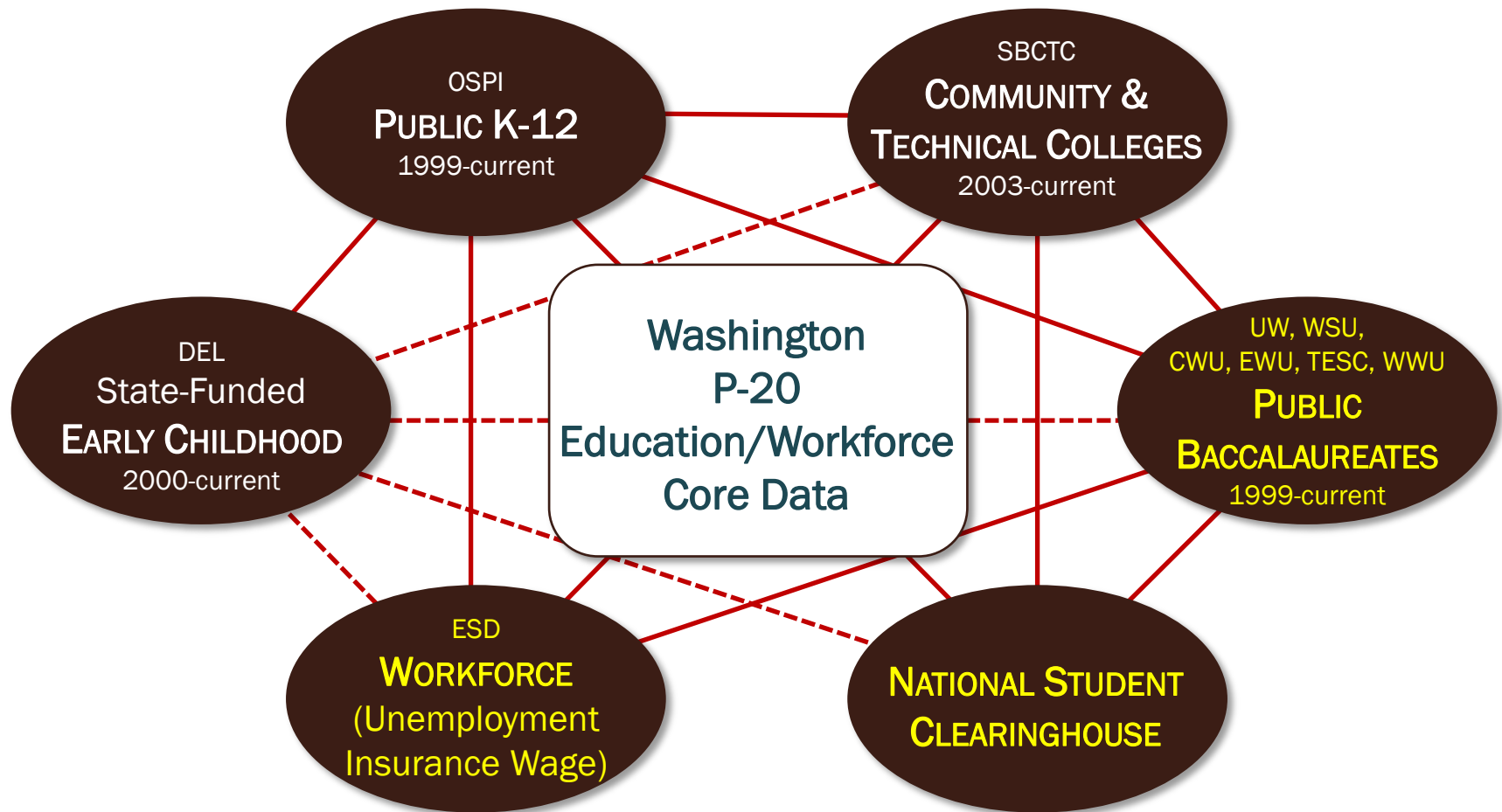
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Presentation Outline

- Data governance context in Washington
- Using employment data
- Findings from The Evergreen State College perspective

P-20W Data System



OSPI = Office of Superintendent of Public Instruction
DEL = Department of Early Learning
ESD = Employment Security Department
SBCTC = State Board for Community & Technical Colleges

UW = University of Washington
WSU = Washington State University
CWU = Central Washington University

EWU = Eastern Washington University
TESC = The Evergreen State College
WWU = Western Washington University

Research Questions Inform ERDC Work

- How many graduates stay in Washington and participate in the workforce?
- In which industries are our graduates employed?
- How do employment characteristics vary by student major field of study?
- What is the effect of the current recession on employment of graduates?
- Do graduates stay with the same employer they had while enrolled?

P-20W Data Governance Goals

- Protect student and employer privacy consistent with applicable laws
- Promote responsible data use
- Increase accessibility of de-identified P-20W data

UI Wage Data: Employment Data Gold Mine

- UI = Unemployment Insurance
- Employers covered by the UI Program submit quarterly:
 - Total wages
 - Washington and a few other states report hours worked
 - Employee name, SSN
- Employer characteristics can be added to wage record
 - Industry
 - Ownership (private, government, foreign)
 - Number of employees
 - Location

Advantages of Using UI Wage Data

- Covers over 97% of employees (non-farm)
- Can be linked to employer characteristics
- Cost-effective!
- Valuable information to inform policy and investment discussions
- Consumer information for prospective students

But no single source is perfect...

We don't know:

- Employment outside Washington
- Occupation
- Distribution of wages within a quarter
- Different jobs for a single employer
- Specific employee locations for multi-site employers
- Predecessor-successor employer relationships
- Some types of employment
 - e.g., self-employed, some non-profit employees

Background: Employer Characteristics

- North American **Industry** Classification System (NAICS)
 - Hierarchical – 6 levels

22 Utilities

221 Utilities

2211 Electric Power Generation, Transmission & Distribution

22111 Electric Power Generation

221113 Nuclear Electric Power Generation

- Ownership codes: Private, Government (Local and State), Foreign
- Occupation is not provided

What's in a UI Wage Record?

2013	1	12345678078051120	Simpson Homer	5200	520	221113	124	500	1400
2013	2	12345678078051120	Simpson Homer	5200	520	221113	124	500	1400
2013	3	12345678078051120	Simpson Homer	5200	520	221113	124	500	1400
2013	4	12345678078051120	Simpson Homer	5200	520	221113	124	500	1400
2013	1	12345678078002346	Simpson Bart	2080	260	221113	124	500	1400
2013	2	12345678078002346	Simpson Bart	2080	260	221113	124	500	1400
2013	3	12345678078002346	Simpson Bart	2080	260	221113	124	500	1400
2013	4	12345678078002346	Simpson Bart	2080	260	221113	124	500	1400

Year	Quarter	Employer Account	SSN	Name	Wages	Hours	Industry	Employees	Ownership	Location
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UI Wage Record

Employer Characteristics

One record for every Year-Quarter-Employer-Employee

These examples are presented for illustrative purposes and do not represent actual UI wage data.

Registering to an Event (Receipt of Degree)

2006				2007				2008				2009				2010				2011				Date of Award	
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	Term	Year
						*																		Summer 2007	2007-08
						*																		Fall 2007	
						*																		Winter 2008	
						*																		Spring 2008	

* Date of award (calendar quarter)

Reference years: 0 1 2 3

Preparation of Employment Data

- Employer Account → Employer Research ID
- SSN → Student Research ID
- Industry Code → Reduced to 2- or 3-digit
- Number of Employees → Size classes
- Unchanged: wages, hours, year, quarter
- Additions:
 - Inflation-adjusted wages (plus values of index used)
 - Imputation details (basis for imputation, imputed hours)
 - State minimum wage values
 - Industry “Supersector” of employer — smaller, more easily managed set of industry categories
 - Reference year and quarter

Preparation of Student Completions Data

- Student ID → Student Research ID
- Birthdate → Age group
- Specific CIP codes for major may be aggregated
- Other characteristics (race/ethnicity, geographic origin) may be grouped into broader categories
- Groupings will be done in consultation with IR shops and will not necessarily be the same across all institutions
- ❖ Possible addition of survey results
- ❖ Enrollment status by year (Washington public institution data plus National Student Clearinghouse)

Two Files to the IR Shop

Wage **Detail** File

- One record for each year-quarter-employer-employee where year-quarter falls within study range
- Original data (de-identified) as described plus additional elements

Wage **Summary** File

- Annual (by reference year): primary employer (corresponds to highest total wages in a year), industry of primary employer, industry super-sector of primary employer, size class of primary employer, part-time/full-time status of employee, number of employers, total wages
- Survey results and enrollment information

Alumni Wage Match Overview

	Total Alumni	Alumni with SSN	Had a Primary Employer in UI data	% with WA UI wage record
Class of 2006	1,272	1,265	995	79%
Class of 2008	1,100	1,093	850	78%
Class of 2009	1,085	1,079	763	71%

Employment Sector Distribution

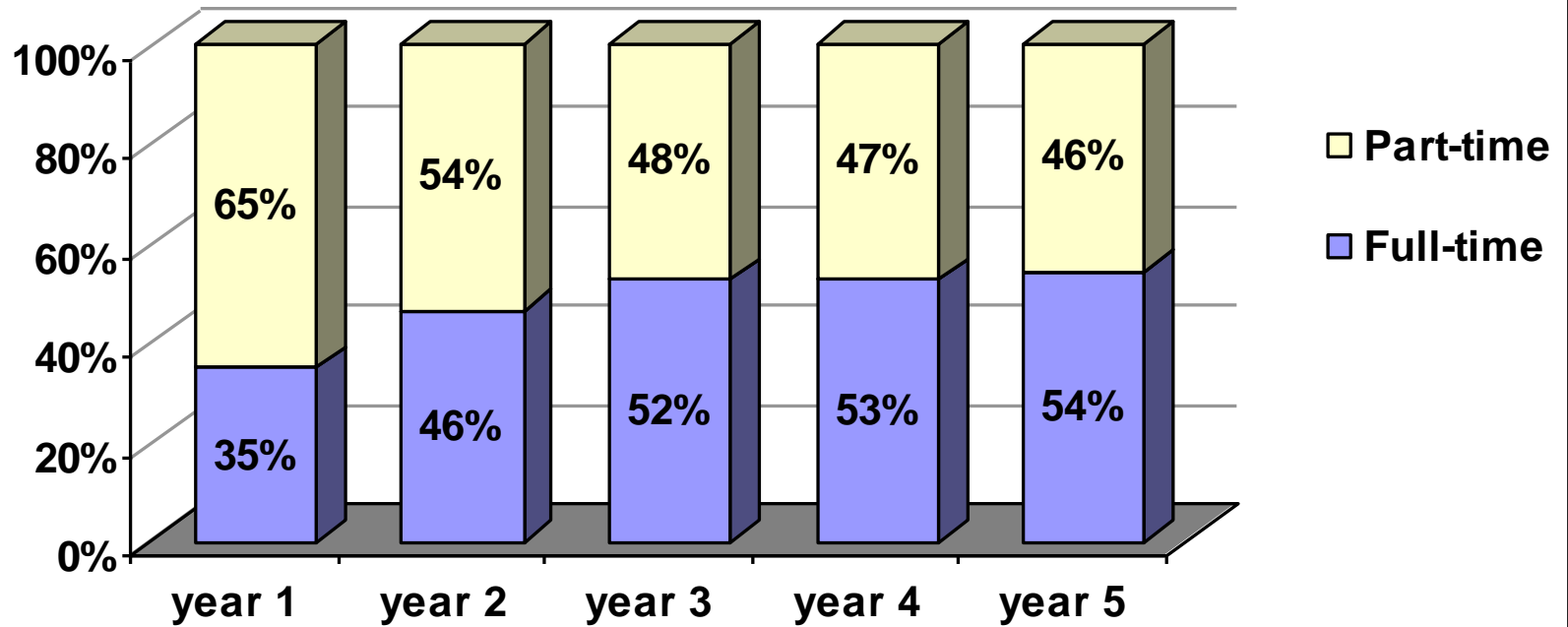
Class of 2006

	year 1	year 2	year 3	year 4	year 5
Total with employment records	71%	60%	55%	51%	48%
Natural resources and mining	1%	1%	1%	1%	0%
Construction	3%	2%	2%	2%	2%
Manufacturing	3%	3%	2%	2%	3%
Trade, Transportation, and Utilities	14%	14%	13%	12%	13%
Information	2%	3%	3%	2%	2%
Financial activities	4%	3%	3%	3%	3%
Professional and Business Services	13%	14%	13%	13%	12%
Education Services	15%	11%	14%	15%	14%
Health Services	14%	17%	17%	16%	18%
Leisure and Hospitality	14%	12%	11%	10%	11%
Other Services	4%	5%	4%	4%	4%
Public Administration	13%	16%	17%	19%	19%

Change in Employment Level

Class of 2006

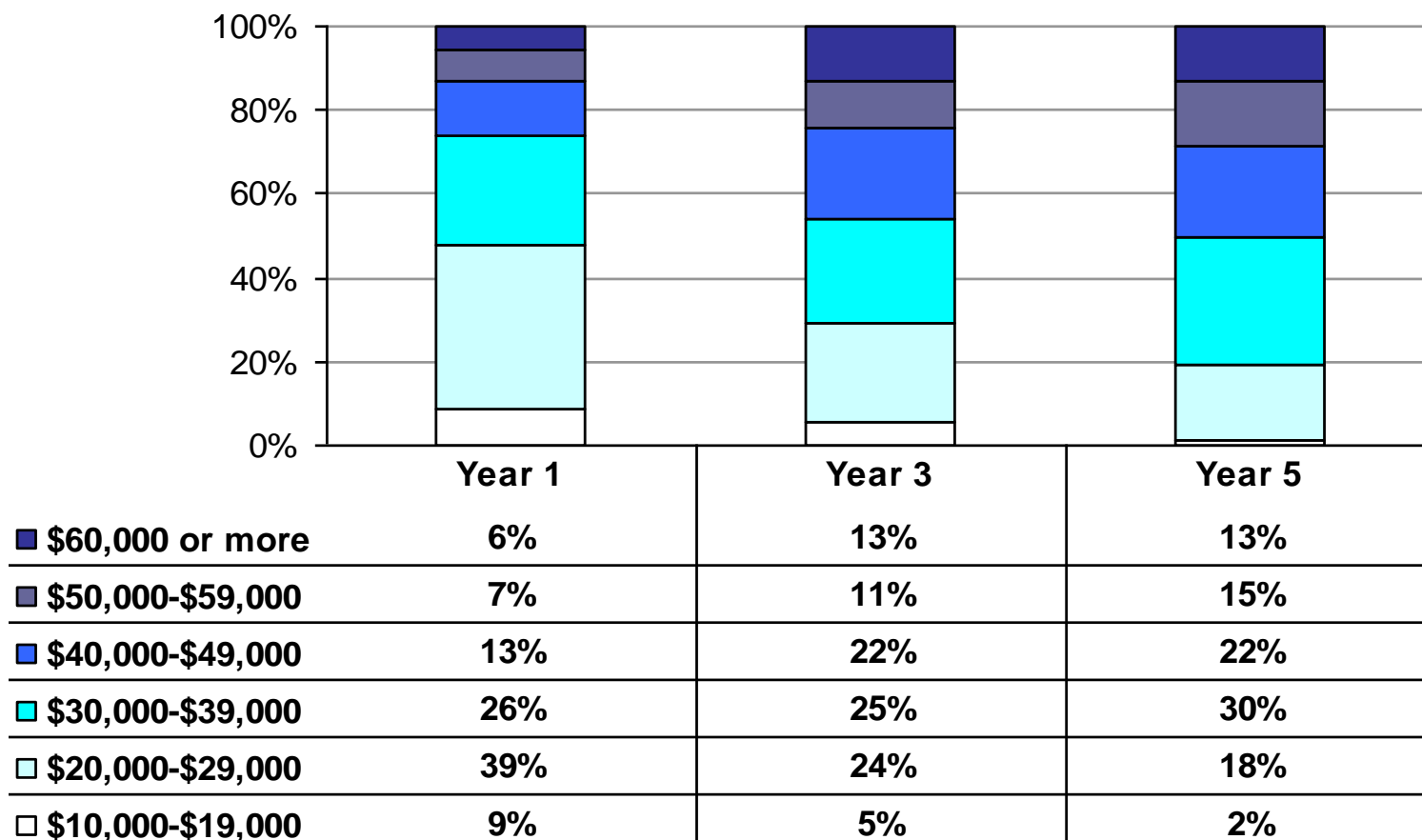
Percent employed full-time vs. part-time



Change in Wages

Class of 2006

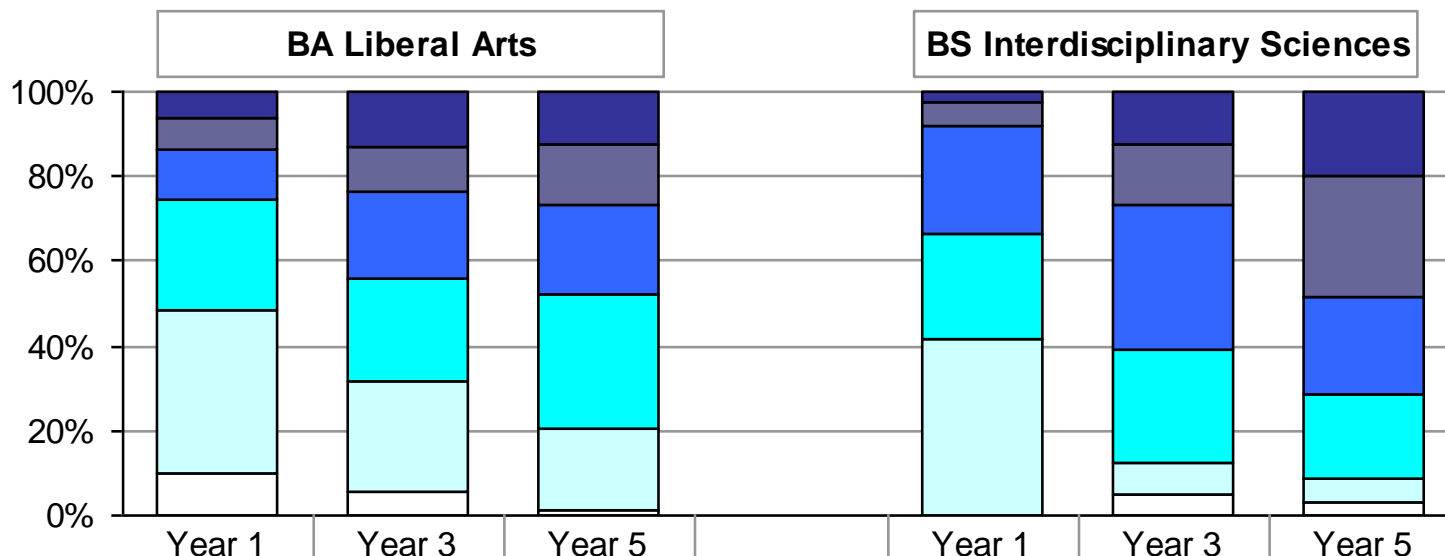
Wage change over time for full-time employed



Change in Wages

Class of 2006

Comparison of wage change by degree program



Do graduates work for same employer as when they graduated?

Age Group (Yr of Grad)	N	Same employer at Yr 0 at some point Yr 1-5	Mean # primary employers	More than 1 primary in 5 yrs after grad
18-22	161	30%	1.77	52%
23-29	510	33%	1.86	56%
30 and older	323	48%	1.77	51%

Relationship of Industry and Occupation (per Alumni Survey)

Public
Administration

Business & Financial Operations
Management

Community & Social Services

Legal Occupations

Life Science

Office/Administrative Support

Building/Grounds Maintenance

Farming/Fishing/Forestry

Relationship of Industry and Occupation (per Alumni Survey)

Leisure &
Hospitality

Food Preparation/Serving
Office/Administrative Support
Sales
Farming/Fishing/Forestry
Business & Financial Operations
Education/Training
Personal Care and Services
Life Science
Media & Communications

Matching UI Wage Data with Alumni Survey Data

Total Matched Research Records	281	
Alumni Survey Employed	196	70%
UI Wage Data Employed	174	62%

Compare Alumni Survey Employment to UI Wage Employment

Alumni “Primary” Occupation	Employed per Survey	Employed WA UI	% of group UI Wage located
Private	96	68	71%
Public	54	41	76%
Non-profit	46	34	74%
No Employment Indicated	85	31	36%
Self-employed/ Own Business	25	14	56%

Resources

- Washington Education Research & Data Center (ERDC)
 - ERDC website: www.erdc.wa.gov (Employment Data Handbook coming soon)
- NCES Privacy Technical Assistance Center
 - “Statistical Methods for Protecting Personally Identifiable Information in Aggregate Reporting” (NCES SLDS Technical Brief #3)
nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011603
- National Industry-Specific Occupational Employment and Wage Estimates
 - www.bls.gov/oes/2011/may/oessrci.htm#61
- Jacob France Institute, University of Baltimore
 - www.ubalt.edu/jfi (additional sources of employment information)
- Handouts from “Workforce Connections with Postsecondary Education,” presented Monday, June 4, 1 p.m., this conference (#2713), by Chris Mullin (AACC), Brian Prescott (WICHE), and David Stevens (UB/JFI)
- State Labor Market Information (LMI) Directors (employment information for your state)
 - lmiontheweb.org/?page=8

Thanks for your time!

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